75TH CONGRESS } COMMITTEE ON RIVERS AND HARBORS, { DOCUMENT
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SCAJAQUADA CREEK, N. Y.

LETTER

FROM

THE CHIEF OF ENGINEERS, UNITED STATES ARMY

TRANSMITTING

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS ON REVIEW OF REPORTS HERETOFORE SUBMITTED ON SCAJAQUADA CREEK, BUFFALO, N. Y., WITH ILLUSTRATION.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, January 7, 1937.

The CHAIRMAN, COMMITTEE ON RIVERS AND HARBORS,
House of Representatives, Washington, D. C.

MY DEAR MR. CHAIRMAN: 1. The Committee on Rivers and Harbors of the House of Representatives, by a resolution adopted July 31, 1936, requested the Board of Engineers for Rivers and Harbors to review the reports on Scajaquada Creek, Buffalo, N. Y., submitted in House Executive Document No. 157 (48th Cong., 2d sess.), with a view to determining whether closure of the creek to navigation is advisable. I enclose herewith the report of the Board in response thereto.

2. Scajaquada Creek is a small stream which flows westward through the city of Buffalo and enters the Black Rock ship canal on the east side of Niagara River, 3½ miles below the entrance to the canal from Lake Erie at Buffalo Harbor. It is navigable and was once navigated from its mouth to the West Avenue Bridge, a distance of 1,500 feet. This reach of the waterway is generally 6 feet or less in depth and 40 to 80 feet wide, and has several sharp bends. The New York Central Railway and the Niagara Street highway bridges, with but limited overhead clearances, cross the waterway at points 660 and 760 feet, respectively, above its mouth. No project for improvement of Scajaquada Creek has been authorized by Congress. The Hall Firebrick Co. is reported to have expended $22,000 in dredging a channel 10½ feet deep to its plant just above West Avenue, and the city of Buffalo redredged this area in 1929 to compensate for

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shoaling attributed to park improvements above. The waterway has not been used for commercial navigation since 1931. The city and certain other local interests desire that the creek be declared a non-navigable stream above the west property line of the New York Central Railway, in order that this section may be completely covered and the existing obsolete Niagara Street Bridge replaced with a culvert at a saving of several thousand dollars. Opposition to this proposal was made by the Hall Firebrick Co.

3. In past years the commerce on Scajaquada Creek included fire clay barged to the Hall Co.'s wharf and sand and gravel received at the International Railway Co.'s wharf near Niagara Street. The sand and gravel movement disappeared in 1928; and the fire-clay tonnage decreased from 4,811 tons in 1930 to 421 tons, valued at $1,742, in 1931. The Hall Co. has since received its fire clay either by rail or by water to a nearby wharf on the Black Rock Canal. No commerce has moved over Scajaquada Creek since 1931.

4. The Board of Engineers for Rivers and Harbors, after considering the reports of the district and division engineers and after affording local interests full opportunity to submit additional information to the Board, finds that Scajaquada Creek in its present condition is but an open drain, and that its improvement for use by commercial navigation would entail expenditures far exceeding any reasonably foreseeable benefits. Compliance with the city's request will not be detrimental to general navigation but, on the other hand, will facilitate the civic development of the vicinity. The Board accordingly reports that the closure to navigation of that part of Scajaquada Creek, Buffalo, N. Y., above a line 130 feet west of the west line of Niagara Street, is advisable in the public interest, and recommends that such part of the waterway be declared by Congress to be a non-navigable stream within the meaning of the Constitution and laws of the United States.

5. After due consideration of these reports, I concur in the views and recommendations of the Board.

Very truly yours,

E. M. MARKHAM,
Major General,
Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

WAR DEPARTMENT,
BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, D. C., December 14, 1936.

Subject: Scajaquada Creek, Buffalo, N. Y.
To: The Chief of Engineers, United States Army.

1. This report is in response to the following resolution, adopted July 31, 1936:

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the reports on Scajaquada Creek, Buffalo, New York, submitted in House Executive Document Numbered 157, Forty-eighth Congress, second session, with a view to determining whether closure of the creek to navigation is advisable.

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2. Scajaquada Creek is a small stream which flows westward through the city of Buffalo and enters the Black Rock ship canal on the east side of Niagara River, 3½ miles below the entrance to the canal from Lake Erie at Buffalo Harbor. It is navigable and was once navigated from its mouth to the West Avenue Bridge, a distance of 1,500 feet. This reach of the waterway is generally 6 feet or less in depth and 40 to 80 feet wide, and has several sharp bends. It is crossed by the New York Central Railroad and the Niagara Street highway bridges, 660 and 760 feet, respectively, above the mouth. The New York Central span has a clear width of 80 feet and minimum overhead clearance at high water of 10 feet, the Niagara Street bridge a width of 54 feet and overhead clearance of 6.4 feet, and the West Avenue Bridge a width of 102 feet and overhead clearance of 8.2 feet. No project for improvement of Scajaquada Creek has been authorized by Congress. The Hall Firebrick Co., whose plant is on the north shore just above West Avenue, is reported to have expended $22,000 in dredging the lower reaches of the creek to a depth of 10½ feet; and in 1929 the city of Buffalo expended $20,000 in redredging this area to compensate for shoaling attributed to park improvements in the areas upstream.

3. In past years the commerce on Scajaquada Creek included fire clay barged to the Hall Co.'s wharf and sand and gravel received at the International Railway Co.'s wharf near Niagara Street. The sand and gravel movement disappeared in 1928; and the fire clay tonnage decreased from 4,811 tons in 1930 to 421 tons, valued at $1,742, in 1931. The Hall Co. has since received its fire clay either by rail or by water to a nearby wharf on the Black Rock Canal. No commerce has moved over Scajaquada Creek since 1931.

4. The city of Buffalo and other local interests request that Scajaquada Creek above the west property line of the New York Central Railroad be declared nonnavigable. This action is desired to enable the city to cover completely that section of the stream between Niagara Street and West Avenue, which is unsightly and a menace to health and is nonnavigable in fact; and to replace the existing obsolete Niagara Street Bridge with a culvert, at a saving of several thousands of dollars over the cost of a new bridge. The suggested action is opposed by the Hall Firebrick Co., which states that the creek is vital to its business in that raw materials can be procured at about 100 percent decrease over present freight rates, and claims that the present unsatisfactory condition of the waterway is due to the installation by the city of an inadequate bulkhead when the channel was redredged in 1929.

5. The district engineer states that no traffic is possible on Scajaquada Creek until the channel is redredged, at a cost estimated at not less than $31,000 for new work and $6,000 annually for maintenance. The stream is narrow and tortuous, and even if deepened would be navigable only by canal barges. The city is definitely opposed to continuance of the waterway and the Hall Co., which is the only potential user, has indicated no intention to redredge the creek or make it navigable in fact. The receipt of fire clay by barge directly at the Hall Co. plant would afford a saving of only 57 cents per ton over the least expensive alternate method, and the total savings on the present volume of business would be far less than the carrying charges on the improvement. He concludes that the desired closure of the creek would not be adverse to the interests of

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navigation. The section under examination is semistagnant and odorous and more nearly resembles an open drain than a waterway; and its conversion into a covered drain, as has been done along the upper reaches of the stream, would improve the neighborhood from a sanitary standpoint and eliminate the present unsightliness. The existing Niagara Street Bridge must soon be replaced because of age and unsatisfactory design, and the substitution of a culvert with a lower street grade would afford a saving of several thousand dollars over the cost of a new bridge. The district engineer concludes that closure of the creek as requested would be in the best interests of all concerned. The division engineer states that the improvement of Scajaquada Creek for navigation would be uneconomical. Its closure to navigation would be of distinct benefit to the city and neighborhood, except the one potential but not very probable user. He accordingly concurs with the district engineer in recommending that Scajaquada Creek be declared nonnavigable east of a line 130 feet west of the west line of Niagara Street.

6. Local interests were advised of the nature of the division engineer's recommendations and invited to submit additional arguments to the Board. One communication was received from the law department, city of Buffalo, concurring in the division engineer's recommendations.

7. *Views and recommendations of the Board of Engineers for Rivers and Harbors.*—The Board concurs in general with the reporting officers. Scajaquada Creek in its present condition is but an open drain, and its improvement for use by commercial navigation would entail expenditures far exceeding any reasonably foreseeable benefits. Compliance with the city's request will not be detrimental to general navigation, but on the other hand will facilitate the civic development of the vicinity. The Board therefore reports, in response to the committee resolution, that the closure to navigation of that part of Scajaquada Creek, Buffalo, N. Y., above a line 130 feet west of the west line of Niagara Street, is advisable in the public interest, and recommends that such part of the waterway be declared by Congress to be a nonnavigable stream within the meaning of the Constitution and laws of the United States.

For the Board:

G. B. PILLSBURY,
Brigadier General, Corps of Engineers,
Senior Member.

REPORT OF THE DIVISION ENGINEER

WAR DEPARTMENT,
OFFICE, DIVISION ENGINEER, GREAT LAKES DIVISION,
Cleveland, Ohio, October 14, 1936.

Subject: Review report on Scajaquada Creek, Buffalo, N. Y.
To: The Chief of Engineers, United States Army.

1. *Authority.*—This report is submitted in compliance with the following resulution adopted July 31, 1936:

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors, created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby,

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requested to review the reports on Scajaquada Creek, Buffalo, New York, submitted in House Executive Document Numbered 157, Forty-eighth Congress, second session, with a view to determining whether closure of the creek to navigation is advisable.

2. *Nature of reports being reviewed.*—The reports under review were preliminary and survey reports submitted in 1884 and 1885. In them the district engineer considered the advisability of improving the channel in the lower mile of the creek, at an estimated cost of $26,000. There was no subsequent authorization and no work has been done by the Federal Government since that time.

3. *Description.*—Scajaquada Creek is a small stream about 8 miles long. It flows westerly through the city of Buffalo and empties into Black Rock Canal, on the easterly side of Niagara River, about 3½ miles below the Lake Erie entrance to the canal and about 3,000 feet upstream from Black Rock ship lock. It has been considered navigable water of the United States from its mouth 1,500 feet upstream to the West Avenue Bridge. In this reach it is from 40 to 80 feet in width and has maximum depths in midchannel varying from 6 to 10 feet. The locality is shown on United States Lake Survey charts nos. 3, 312 and 314, and on the map accompanying this report.

4. Fluctuations of water level are those common to Lake Erie and, as measured by monthly means, have ranged from 4 feet above to 1 foot below present low water datum (570.5 feet mean sea level). Temporary fluctuations at the eastern end of Lake Erie have ranged from about 9 feet above to 3 feet below that plane.

5. There is no Federal project for the improvement of Scajaquada Creek.

6. *Bridges.*—The bridges that cross the creek within its navigable limits are as follows:

Designation and ownership	Type	Distance above mouth	Horizontal clearance	Vertical clearance
		Feet	*Feet*	*Feet*
New York Central R. R.	Fixed railroad	660	80	17.6
Niagara St.	Fixed highway	760	54	14.0
West Ave.	do	1,500	102	15.8

The last-named bridge is the upper navigable limit. Bridge alterations are herein involved to the extent that local interests desire to have the stream above the New York Central bridge declared nonnavigable, after which they intend to replace Niagara Street Bridge with a closed culvert.

7. *Improvements by local interests.*—The banks of the creek below the West Avenue bridge have been, for the most part, bulkheaded, but the timber bulkhead is now dilapidated. Upstream from West Avenue Bridge, the Hall Firebrick Co. has a dock with equipment for unloading fire clay from canal barges. This dock has been unused since 1931. On the opposite bank, downstream from the West Avenue Bridge, the International Railway Co. maintains a sand yard where they formerly received sand by water. Improvement of the channel was undertaken by the Hall Co. in 1924 at a cost of $24,000, while the city of Buffalo redredged the same area in 1929 at a cost of about $20,000.

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8. *Tributary area.*—Scajaquada Creek lies within the city of Buffalo, the metropolitan area of which has a population of about 900,000. This area has numerous diversified industries and commercial enterprises and is adequately served by all manner of transportation.

9. *Commerce—vessel traffic.*—There has been no waterborne commerce handled at the International Railway Co.'s dock since 1928. The Hall Firebrick Co. formerly received fire clay in canal barges at its dock as follows:

Year	Tons	Value	Year	Tons	Value
1928	3,638	$15,885	1930	4,811	$22,275
1929	2,951	12,967	1931	421	1,742

There has been no commerce on Scajaquada Creek since 1931.

10. *Desires of local interests.*—Local interests, headed by city officials, at a hearing held on September 2, 1936, requested that Scajaquada Creek east of the west property line of the New York Central Railroad be declared nonnavigable. They stated that the creek is now nonnavigable in fact, is unsightly and is a menace to health. The city plans eventually to pass the streams above the limit mentioned through a closed culvert and, in the near future, to replace the Niagara Street Bridge with a culvert.

The Hall Firebrick Co. was the sole objector to the request.

11. *Special subjects.*—There are no questions pertaining to waterpower development, land reclamation, shoreline changes, or other special subjects herein involved.

12. *Views and recommendations of the district engineer.*—The district engineer states that the only objector to the closing of Scajaquada Creek to navigation above the westerly line of the New York Central property is the Hall Firebrick Co., which is the only interest utilizing the creek for navigation since 1928. Such use was discontinued in 1931 because of the navigation difficulties encountered. Since 1931 the company has received fire clay by rail and by water at a terminal on Niagara River. There would be a saving of $0.57 per ton on fire clay received at their own dock on the creek as against that received at the river terminal. The maximum annual tonnage received by the company, both by rail and water, since 1931 is 2,074 tons.

13. To improve the creek for navigability requires an expenditure of $31,000 for dredging. The annual economic cost of this improvement he estimates at $8,280 annually, to which must be added repairs and maintenance costs of the dock and unloading equipment. It is thus seen that to improve the creek would be uneconomical. Moreover, there are no other potential users, since other riparian owners above the proposed navigable limit and all other interests concerned are in favor of the change.

14. He states that Scajaquada Creek, in its present condition, is unsightly and unsanitary. Public sentiment is strongly in favor of the requested change. The city proposes ultimately to convert the creek into a closed drain and, in the near future, to replace the existing Niagara Street Bridge with a culvert. Such a plan would substantially improve highway traffic conditions and would be of distinct

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benefit to the immediate vicinity. The interests of navigation would not be adversely affected since there is little prospect of navigation development on the creek. Accordingly, he recommends that the head of navigation be designated as a line parallel to the west line of Niagara Street and 130 feet west thereof, instead of West Avenue as at present.

15. *Views and recommendations of the division engineer.*—I concur in the views of the district engineer. The improvement of Scajaquada Creek for commercial navigation would be uneconomical. On the other hand, its closure to navigation would be of distinct benefit to the city and the neighborhood, excepting the one potential but not very probable user. In this instance the principle of "the greatest good for the greatest number" would indicate acquiescence in the city's request. I, therefore, recommend that Scajaquada Creek, Buffalo, N. Y., be declared nonnavigable east of a line 130 feet west of the west line of Niagara Street.

16. The report of the district engineer is transmitted herewith.

L. V. FRAZIER,
Colonel, Corps of Engineers,
Division Engineer.

REPORT OF THE DISTRICT ENGINEER

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There has been no navigation on Scajaquada Creek since 1931 and none except by the Hall Firebrick Co. since 1928. Changing the head of navigation from West Avenue to the west line of the New York Central right-of-way west of Niagara Street would be in the general public interest as it would enable the city of Buffalo to make sanitary and street improvements on and near an arterial street. The creek is not navigable in fact and local interests indicate no intention of making it so. The annual cost of improving and maintaining the channel is excessive for any benefits that might accrue. Moving the head of navigation from West Avenue to a line 130 feet west of and parallel to the west line of Niagara Street is recommended.

WAR DEPARTMENT,
UNITED STATES ENGINEER OFFICE,
Buffalo, N. Y., October 1, 1936.

Subject: Review report on Scajaquada Creek, Buffalo, N. Y.
To: The division engineer, Great Lakes division, Cleveland, Ohio.

1. *Authority.*—In compliance with instructions from the division engineer, dated August 10, 1936, the following review of a report published as House Executive Document No. 157, Forty-eighth Congress, second session, is submitted in conformity with the following resolution of Committee on Rivers and Harbors of the House of Representatives, dated July 31, 1936:

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the reports on Scajaquada Creek, Buffalo, New York, submitted in House Executive Document Numbered 157, Forty-eighth Congress, second session, with a view to determining whether closure of the creek to navigation is advisable.

2. *Description.*—Scajaquada Creek rises about 8 miles east from the limits of the city of Buffalo and flows westerly through the city. In

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the easterly part of the city the waters of the creek are carried for 2.7 miles in an enclosed drain with a cross-sectional area of 370 square feet. It then emerges and discharges into an artificial lake in Delaware Park, this lake being approximately 500 feet wide and 3,000 feet long. Leaving the lake, Scajaquada Creek then flows an additional 1.5 miles and discharges into Black Rock Canal on the easterly bank of the Niagara River at a point about 3½ miles downstream from the Lake Erie entrance to the canal and about 3,000 feet upstream from the Black Rock Ship Lock. It is listed as a navigable stream up to the West Avenue Bridge. It has a width of 40 feet and a midstream depth of 10 feet at the mouth. Upstream to the West Avenue Bridge the width varies from 53 to 80 feet and the usual maximum depth is 6 feet.

3. *Watershed.*—The watershed for Scajaquada Creek comprises an area of approximately 11,000 acres, the most of it lying easterly from the city of Buffalo.

4. *Water levels and fluctuations.*—Water levels in Scajaquada Creek are substantially the same as those in Buffalo Harbor and are subject to similar fluctuations. The plane of reference for these waters is low-water datum for Lake Erie, elevation 570.5 feet above mean sea level at New York. Ordinary fluctuations in water level range from 4.0 feet above to 1.0 foot below low-water datum, and extreme fluctuations due to wind and other causes are from 9.5 feet above to 3.2 feet below the same datum. The maximum and minimum annual fluctuations, shown by the highest and lowest monthly means of any year, were 2.49 feet and 0.87 foot, respectively. The highest stages usually prevail during the summer and the lowest during the winter.

5. *Charts and maps.*—The general locality is shown on the following United States Lake Survey Charts: Lake Erie (Index No. 3), Upper Niagara River (Index No. 312), and Buffalo Harbor, N. Y., (Index No. 314). A map entitled "Scajaquada Creek, Buffalo, New York", dated September 10, 1936, is attached hereto and forms a part of this report.

6. *Tributary areas.*—That part of Scajaquada Creek under consideration lies wholly within the limits of the city of Buffalo and has no territory directly tributary to it.

7. *Population and resources.*—The city of Buffalo has a population of approximately 602,000 and the population of its metropolitan area is about 920,000. Within the city are six commercial banks with combined resources of about $582,000,000.

8. *Industries.*—Buffalo is the ninth industrial city of the United States and has about 2,000 diversified manufacturing establishments. The city's manufactured output (United States Census 1929) was $720,000,000, and that of its tributary area $1,159,000,000.

There are three industrial plants on Scajaquada Creek; the Hall Firebrick Co. plant located just east of the West Avenue Bridge, just upstream from the limit of navigation, the International Railway Co.'s sand yard is on the south bank upstream from the Niagara Street Bridge, and the Fedders Manufacturing Co. plant is on the west side of the creek between West Avenue and Niagara Street. The General Electric Co. (Buffalo) has a substation down stream from the Niagara Street Bridge.

9. *Bridges.*—The following bridges cross Scajaquada Creek within its navigable limits:

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Designation and ownership	Type	Distance above mouth of waterway (feet)	Clearance of navigation opening (feet)			Traffic	Constructed under War Department permit
			Least horizontal at right angles to axis of channel	Least vertical			
				At low-water datum, elevation 570.5	At high water		
New York Central R. R.	Fixed span	660	80.0	17.6	10.0	Railway	No.
Niagara St. (city)	do	760	54.0	14.0	6.4	Highway	No.
West Ave. (city)	do	1,500	102.0	15.8	8.2	do	No.

10. *Roads and railroads.*—The city of Buffalo has well-paved streets crossing the creek. These connect with the trunk highways of the United States and Canada. The following rail systems enter the city of Buffalo: New York Central; Erie; Pennsylvania; Delaware, Lackawanna & Western; Lehigh Valley; Baltimore & Ohio; Canadian National (Grand Trunk); Michigan Central; Wabash; Nickel Plate; Pere Marquette; and Canadian Pacific. Two industrial railways, Buffalo Creek and South Buffalo, serve the industrial harbor area. The New York Central, Erie, and Lackawanna operate belt-line railways, serving the industrial area, including Niagara Falls, and have connections with the Buffalo water front. There are 700 miles of track within the city limits and over 1,500 miles within the industrial area. Buffalo has 5 passenger and 12 freight terminals which are served respectively by approximately 90,000 passenger and 45,000 freight trains per year. The New York Central Railroad serves industries in the vicinity under consideration.

11. *Connecting channels.*—The table below shows the depths in the connecting channels:

Item	Depth in feet	Remarks
Black Rock Channel to Lake Erie	18.3	Now being deepened to 21 feet.
Westward of Lake Erie:		
Up-bound	21	
Down-bound	25	Not completed.
Welland Canal	25	
New York State Barge Canal—Tonawanda, Oswego, Albany	12	
St. Lawrence River canals to Montreal	14	

12. *Prior reports.*—No report on Scajaquada Creek has been made other than that which is the subject of this review. That report was submitted to the Chief of Engineers by the district engineer under date of January 17, 1885. It considered the advisability of improving the channel by dredging the lower mile of the creek to a width of 100 feet and a depth of 10.5 feet. It pointed out that the navigability of the creek had been seriously impaired by the shoaling of the channel due to the practice of using it as a dump ground for refuse and dredged material, and by the construction of several fixed bridges. The report estimated the cost of the dredging at $26,000, but there was no subsequent authorization, nor has any work since been undertaken by the Federal Government.

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13. *Project.*—No project for the improvement of Scajaquada Creek has ever been authorized by the Federal Government.

14. *Other improvements.*—The Hall Firebrick Co. has a dock just upstream from the limit of navigation for unloading and storing fire clay from New Jersey. The International Railway Co. has a dock at its sand yard for unloading sand.

15. *Local cooperation.*—In 1924 the Hall Firebrick Co., Inc., dredged the lower reaches of Scajaquada Creek to a depth of 10.5 feet, at a cost of $22,000, and in 1929, the city of Buffalo redredged the same area at a cost of approximately $20,000.

16. *Terminal and transfer facilities.*—There are no well-developed terminals along Scajaquada Creek. The Hall Firebrick Co., Inc., has equipment for unloading fire clay from canal barges at its dock and the International Railway Co. has a crane and bins for handling the sand that formerly was unloaded at the dock owned by that company.

17. *Desires of local interests.*—A public hearing was held at Buffalo, N. Y., September 2, 1936. The city of Buffalo requested that Scajaquada Creek be closed to navigation upstream from the west line of Niagara Street in order that the city could convert it into an enclosed drain between Niagara Street and West Avenue. At the hearing it was requested and not objected to by anyone present that the downstream limit of the enclosed drain be moved to the western property line of the New York Central Railroad. The city planning commission announced that if the creek were covered, it would eventually incorporate the closed portion as part of a boulevard system and ornamental parkway project.

18. *Commerce.*—The International Railway Co. formerly brought in by barge as much as 48,000 tons of sand and gravel to their dock on Scajaquada Creek. When ready-mixed concrete became available, this amount dropped to about 7,500 tons and with the development of prompt delivery to the work, by trucks, it decreased to about 5,000 tons. None has been handled at this location since 1928. The Hall Firebrick Co. formerly received fire clay from New Jersey at their dock. Following is the record of such receipts for 1928–31:

Year	No. of cargoes	Amount short tons	Value	Year	No. of cargoes	Amount short tons	Value
1928	16	3,636	$15,885	1930	20	4,811	$22,275
1929	12	2,951	12,967	1931	2	421	1,742

There has been no commerce on Scajaquada Creek since 1931.

19. *Estimates.*—To dredge a channel 30 feet wide and 10 feet deep, at low-water datum, from the Black Rock Canal to the upstream limit of the Hall Firebrick Co.'s dock: 19,200 cubic yards at $1.61 say, $31,000.

The annual costs of this channel would be:

(*a*) Interest at 4 percent	$1,240
(*b*) Maintenance	6,000
(*c*) Obsolescence, 3.356 percent compounded annually for a 20-year life	1,040
Total annual cost	8,280

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20. *Difficulties attending navigation.*—Scajaquada Creek empties directly into Black Rock Canal, but is separated from the navigable channel by about 200 feet, in which the intervening depth averages 7½ feet. The creek is approximately perpendicular to the canal for a distance of about 75 feet, then makes almost a right-angle bend to the south. The mouth of the creek is restricted to a 40-foot width which combined with the acute change of direction makes entrance difficult, even for barges. Sharp bends are also encountered about 250 feet apart, under the New York Central Railroad bridge and just east of the Niagara Street Bridge, with the added difficulty of only 50 feet horizontal clearance under the latter. Above the mouth, midstream depths average about 6 feet to the West Avenue Bridge.

21. *Discussion.*—In December 1934 the city of Buffalo applied for permission to close Scajaquada Creek from Black Rock Harbor to West Avenue and replace the stream with a covered drain, principally to facilitate bridge replacements at Niagara Street and West Avenue. Three protests were received from property owners on the creek, viz, Hall Firebrick Co., an active concern, Day Holding Corporation, and Iroquois Gas Corporation, the latter two owning unimproved properties. This plan was dropped when it appeared that the Niagara Street Bridge could be replaced with emergency relief funds obtained by the State and thus allow the creek to remain open. War Department approval to replace the bridge was granted June 18, 1936. Later developments caused the State to withdraw its offer to bear the cost of the replacement. The city has returned to its original plan for enclosing the creek, except that it now desires to cover it only between West Avenue, the head of navigation, and the west side of Niagara Street, a distance of about one-eighth of a mile, or half of the navigable length. The city has accordingly requested that the west side of Niagara Street be designated as the head of navigation. That portion of the creek from its mouth to Niagara Street would be undisturbed. This eliminates the objections of the Day Holding Corporation and Iroquois Gas Corporation, whose properties are on this portion of the creek, leaving the Hall Firebrick Co. as sole objector to the change.

22. Since 1928 the Hall Firebrick Co. has been the only interest utilizing Scajaquada Creek for shipping and, because of navigation difficulties, discontinued its use in 1931. Fire clay was shipped in from New Jersey via the New York State Barge Canal. Method of shipping up the creek was by a single canal barge, 100 feet long, 17 feet beam, 9 feet draft, towed by a small tug. Barges were returned light as no outgoing shipments were made via the creek.

23. The unloading facilities at the Hall Co. consist of about 200 feet of timber bulkhead in lieu of a wharf, about 25 years old, an electric crane installed in 1923 at a stated cost of $12,000, and overhead conveyors. In the present condition of all equipment considerable expense would be involved in repairs to place in use again. The amount of $22,000 expended by the company for dredging in 1924 apparently is the only private contribution toward improving the creek during its period of use, about 65 years. In July 1929 to compensate for the adverse effects of dredging in Delaware Park Lake, 1½ miles upstream, the city of Buffalo at a cost of about $20,000 dredged a channel 10 feet deep, 1,800 feet long, and 30 feet wide from Niagara Street to a point 300 feet northeast of the West Avenue

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Bridge, which included the improved frontage of the Hall Co. Soundings taken in June 1935 by this office in the creek from Black Rock Harbor to West Avenue indicate only from 5.0 to 6.0 feet depths available in midstream. The Hall Co. states that a minimum depth of 9.0 feet is required for their boats.

24. The fact that the company has been able to operate the past 5 years without the use of the creek would indicate that it is not indispensable to their business. Although lacking the convenience of unloading water shipments direct at the site, shipment by water can still be made as in previous years except that other terminal facilities are required. Since 1931 receipts of fire clay by the Hall Co. have been as follows:

Year	Tons (short)		Year	Tons (short)	
	Rail	Water		Rail	Water
1932	499		1934	905	
1933	720		1935	1,604	470

In 1935 the company used the dock of the American Radiator Co. at the foot of Austin Street, about 1 mile distant on the Niagara River.

25. The rail rate from Perth Amboy, N. J., to Buffalo is $3.60 per ton as against $2.25 by barge. The docking charge is $50 for four 200 ton barges or $0.0625 per ton. The hauling charge from dock to plant is $0.50 per ton. This gives a unit cost via water of $2.82 per ton as against $3.60 by rail. Further savings could possibly be effected by utilizing unimproved sites at the mouth of Scajaquada Creek only about one-fourth mile distant. A comparison of cost of present manner of shipment by water via American Radiator Co. dock and truck to the Hall yard at $2.82 a ton as against on barge at the latter company's dock at $2.25, gives a difference of $0.57 a ton in favor of the latter. To effect this economy must be considered an initial minimum expenditure of $31,000 for dredging the creek from the Black Rock Channel to the Hall plant, cost of maintenance estimated at $6,000 annually, plus cost of repairs to and maintenance of terminal facilities.

26. There has been no navigation on Scajaquada Creek since 1931, and no property owners or manufacturing interests are concerned with present or future prospects of using the creek above Niagara Street except the Hall Firebrick Co., which is located above the head of navigation. There are no harbor lines in Scajaquada Creek. Due to the difficulties of entering the creek, narrow channel, and winding course, even with a 10-foot depth it would not be navigable for any vessels but canal barges, for which the Hall Firebrick Co. is the only potential user. No traffic is possible unless the channel of 1929 is redredged and the city is definitely opposed to continuance of the creek east of Niagara Street. The Hall Co. has indicated no intention to redredge the creek or further make it navigable.

27. Niagara Street is one of the principal north and south arteries of Buffalo and in this region traverses a highly developed industrial area. The existing bridge over Scajaquada Creek has two longitudinal plate girders located within the paved area which are the principal causes of

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automobile accidents. For this reason and the age of the structure, erected sometime prior to September 1890, its replacement is a necessity. If the creek were not navigable at this point, the present bridge could be replaced by a culvert with a lower street grade, saving several thousands of dollars over the cost of a new bridge.

28. In its present condition Scajaquada Creek in this vicinity more nearly resembles an open drain than a waterway. There is no appreciable current, the water is semistagnant, and during warm weather a pronounced rancid odor is present. From Main Street to Genesee Street, 2.9 to 5.6 miles from its mouth, the waters of the creek are in an enclosed and covered drain. Replacing the open creek in this vicinity by a similar covered drain would improve the neighborhood from the sanitary standpoint as well as eliminate the present unsightliness.

29. Although the city requests that the creek be closed above the west side of Niagara Street, the New York Central Railroad, whose tracks parallel the street over the creek, requests that its west property line, 130 feet below, be considered as the head of navigation. This would not deprive the creek of any useful navigable length if the city's application be favorably considered.

30. It appears that closing that portion of Scajaquada Creek as requested by the city is strongly supported by public sentiment of the community, that there is no protest from any interest bordering on that part of the creek requested to be closed, and the only protest is from one upstream interest.

31. *Other special subjects.*—There are no problems of water power, land reclamation, land erosion, accretions, flood control, or other related subjects to be coordinated with the subject matter of this report.

32. *Conclusions and recommendations.*—In view of the fact that there have been no navigable benefits obtained from Scajaquada Creek since 1931; that local interests have indicated no intention of making the creek navigable; and that the costs of making the waterway navigable are incommensurate with the benefits to be obtained, it is concluded that closing Scajaquada Creek upstream from the west property line of the New York Central Railroad would not be adverse to the interests of navigation, but would be for the best interests of all concerned.

33. It is recommended that the head of navigation be designated as a line parallel to the west line of Niagara Street and 130 feet west thereof, instead of West Avenue as at present.

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